



Update on CMS Installation and Commissioning

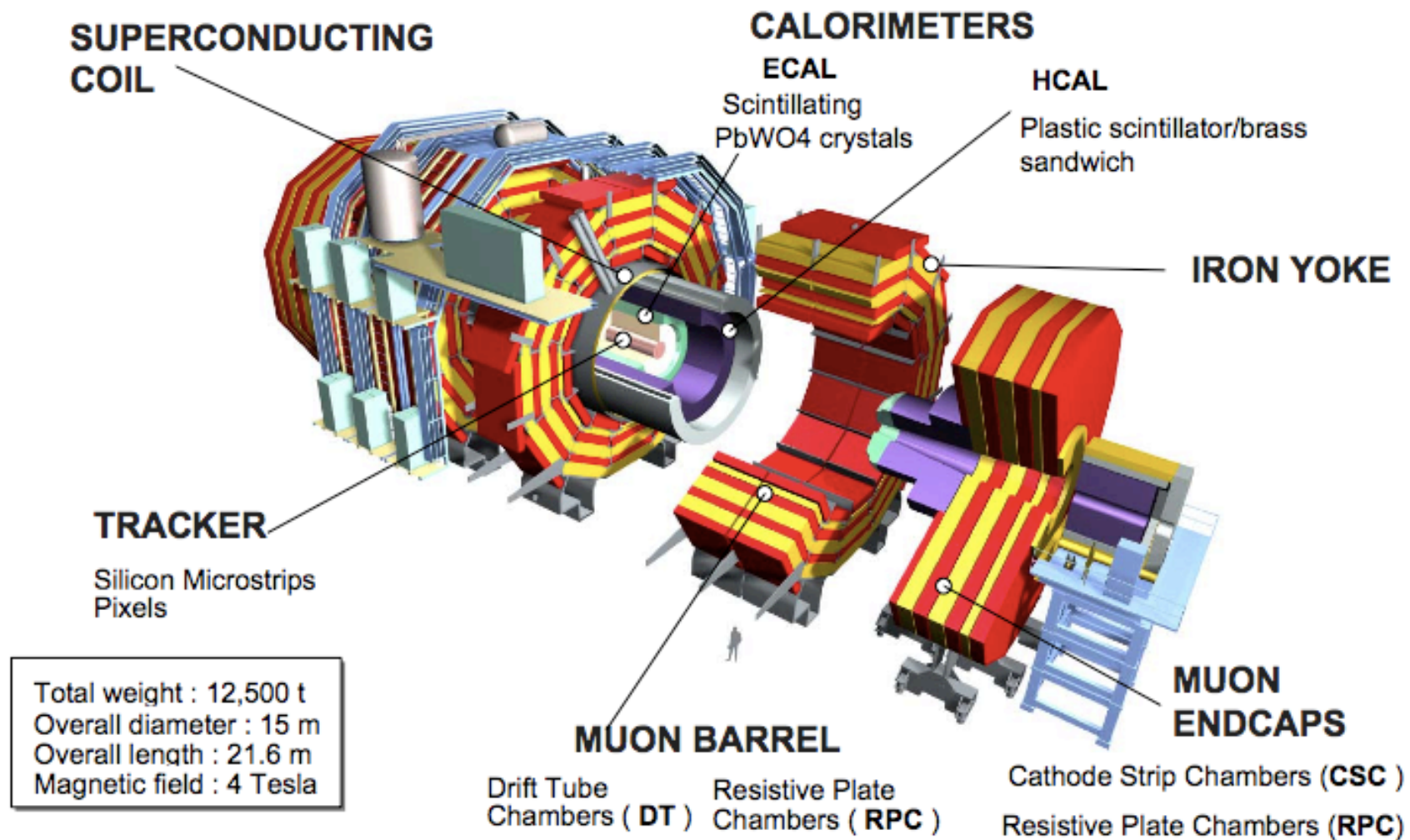
All Experimenters' Meeting

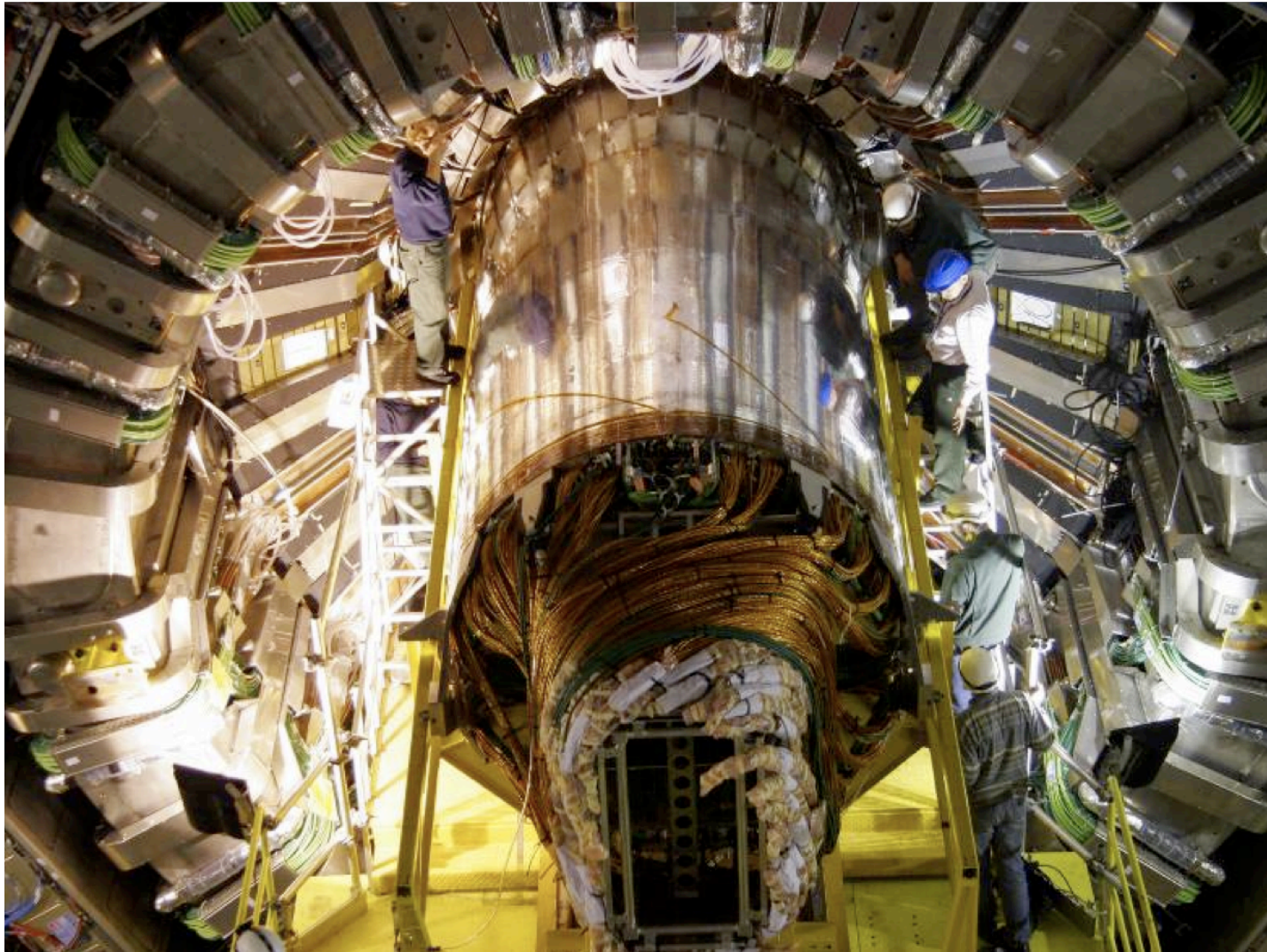
February 17, 2008

Lenny Spiegel

Last AEM CMS update December 17, 2007 by Kaori Maeshima

Compact Muon Solenoid





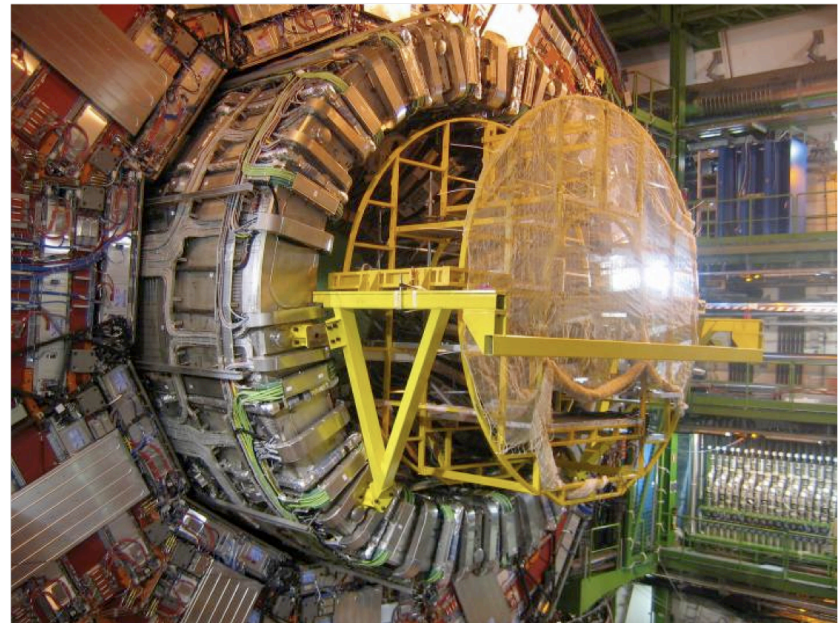
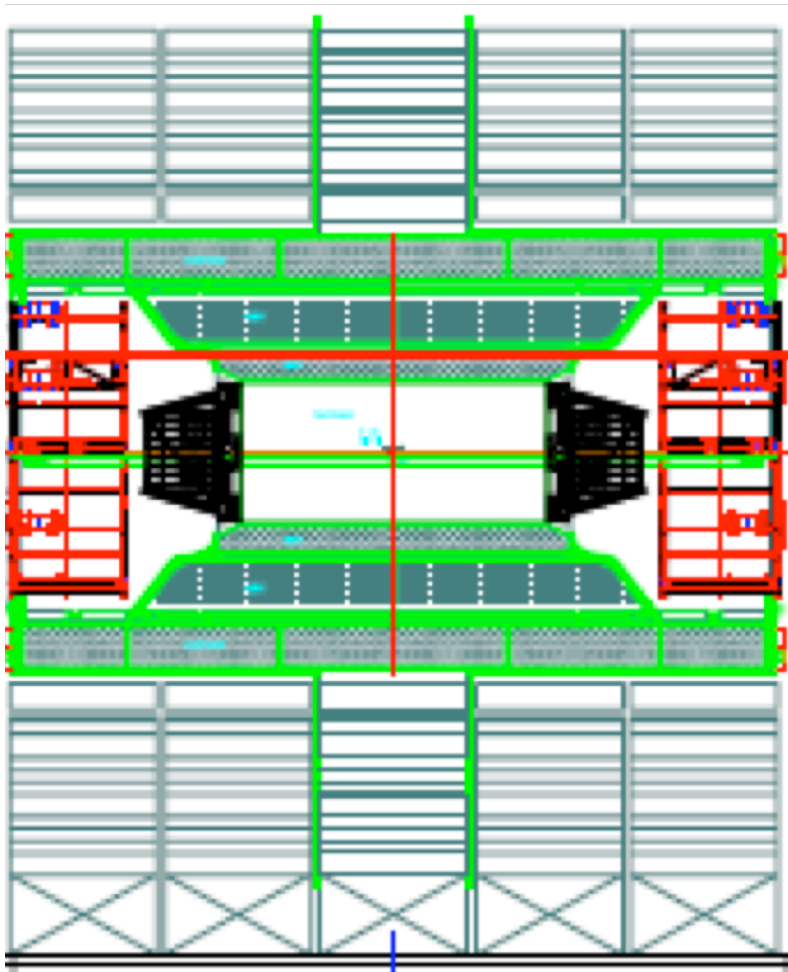
Strip Tracker Installed in Solenoid on December 15

Feb. 11, 2008

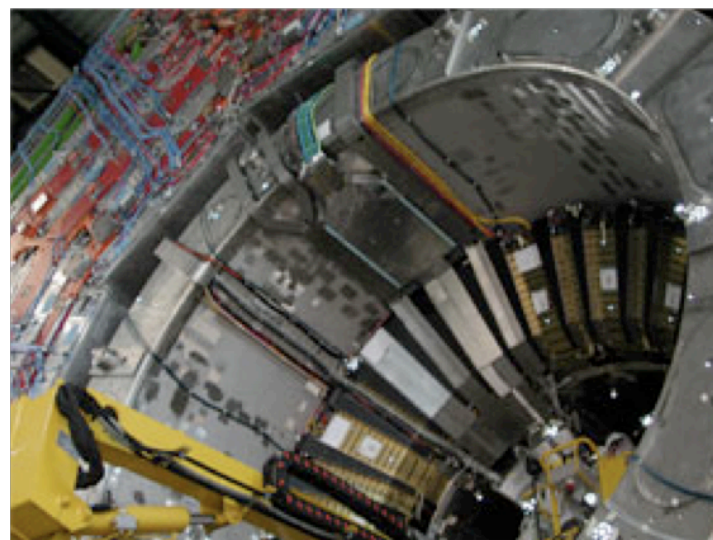
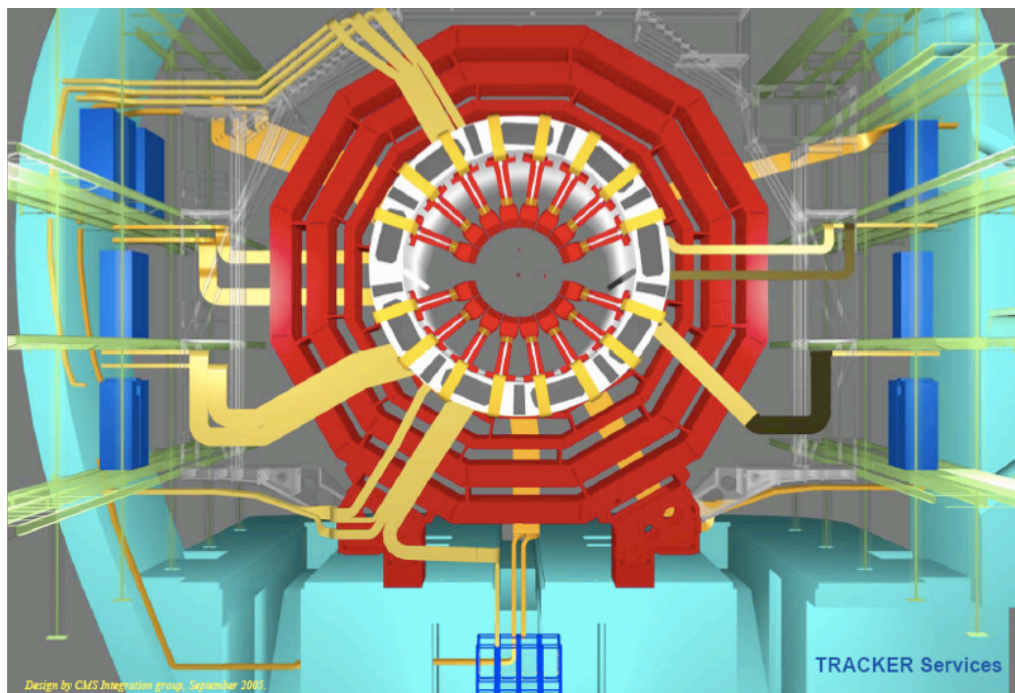
L. Spiegel

All Experimenters' Meeting CMS
Installation and Commissioning

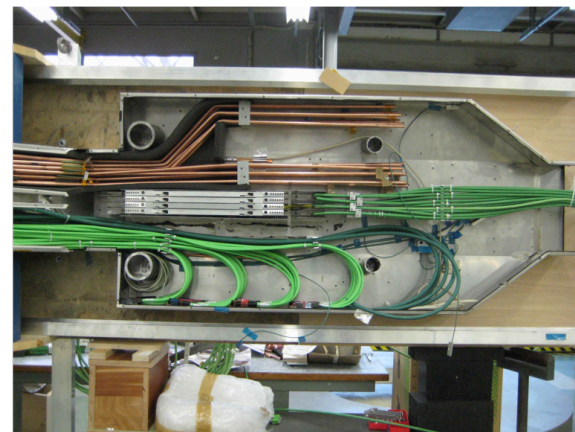
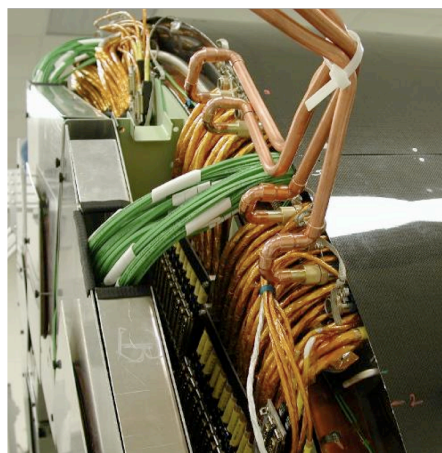
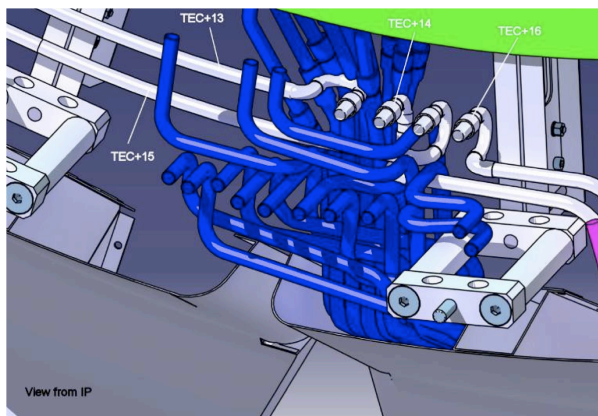
Tracker Service Connections



- Tracker has been aligned to ± 1 mm
- Nose cones removed in Week 2
- Connection of Tracker to PP1 started in Week 3.
- Connection of cooling pipes started in Week 4



Tracker PP1

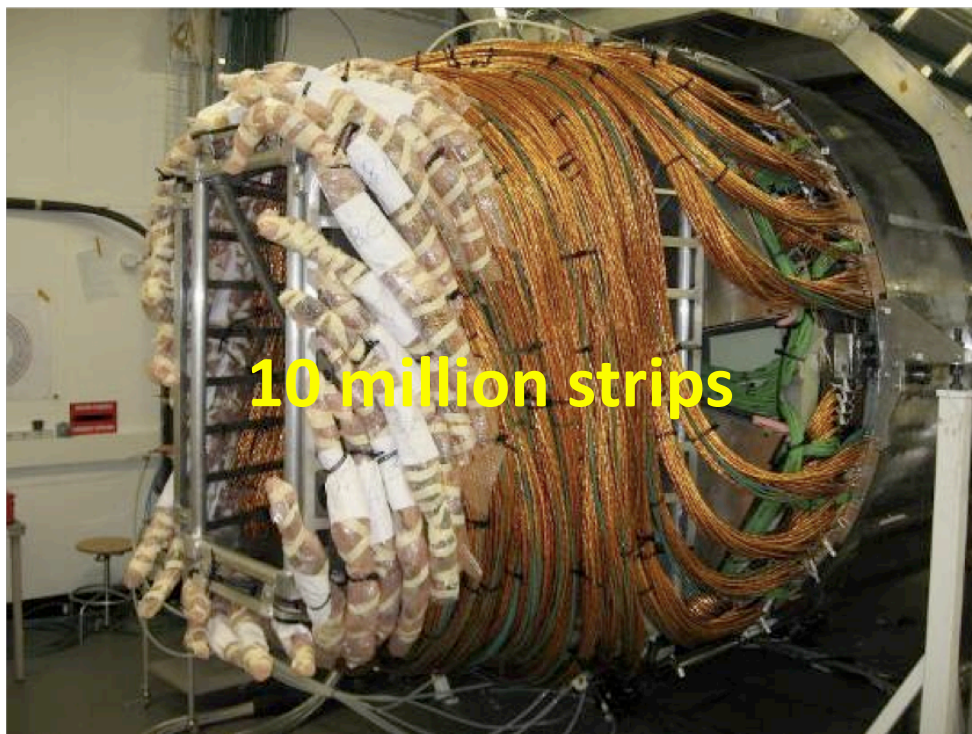


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Tracker Connections



980 pipe connections

Week 6: ~25%

3347 fiber connections

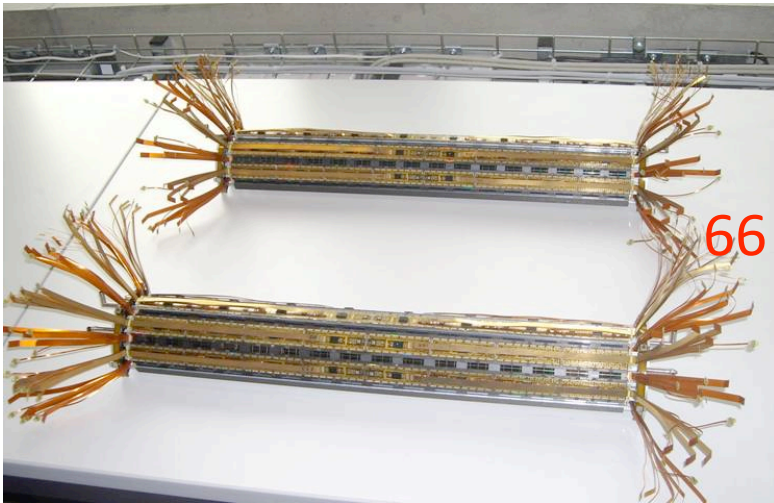
Week 6: ~43%

2330 cable connections

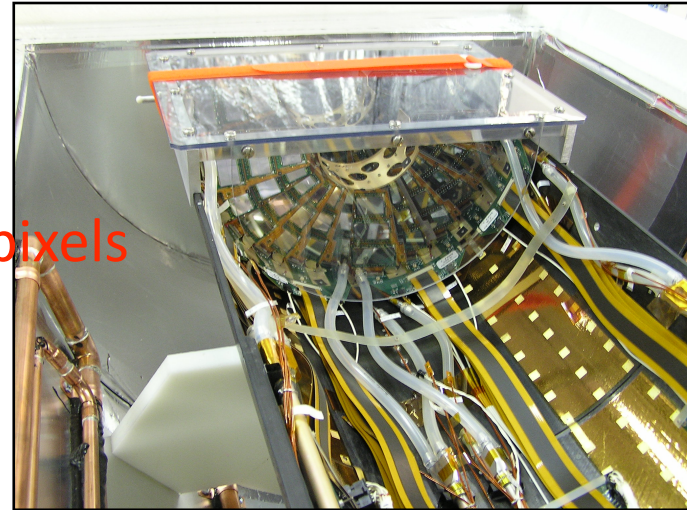
**Pipe insulation, barrel
cables, TEC fibers, TEC
cables.**

34 technicians and 12 supervisors from Tracker institutes.

Barrel and Forward Pixel Systems

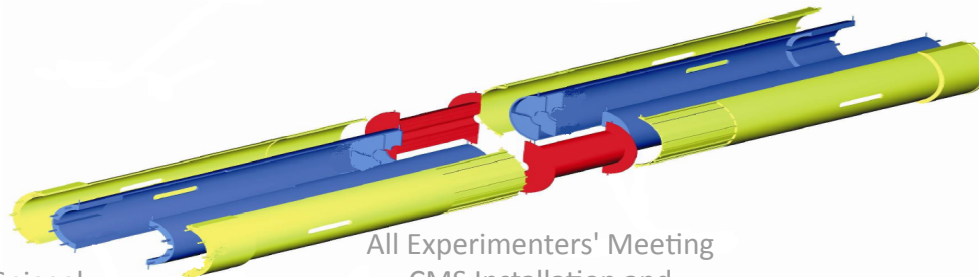


66 million pixels

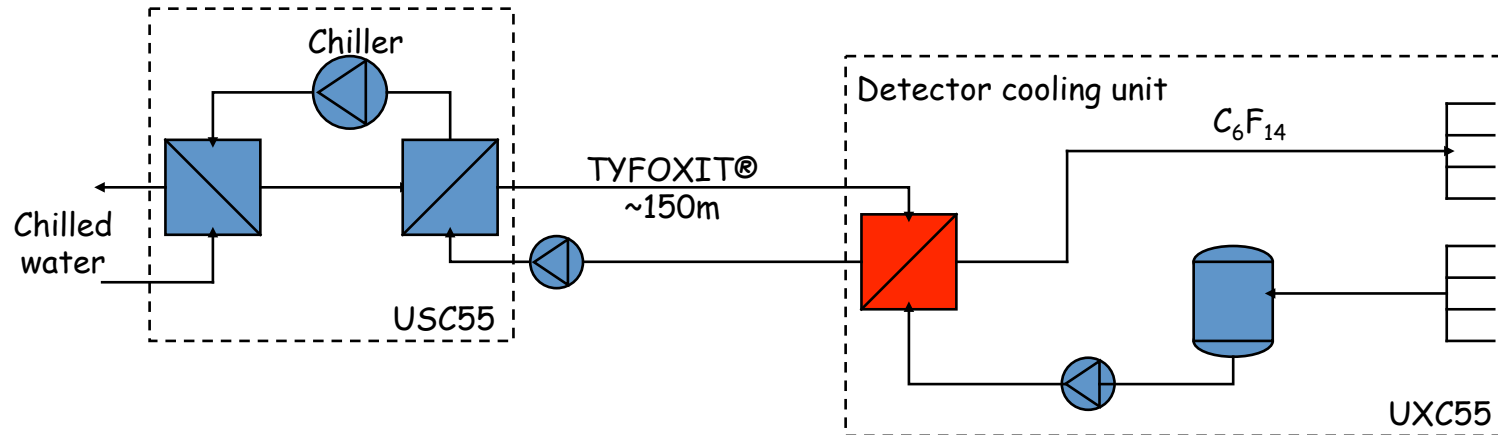


BPIX being commissioned at PSI.
All modules have been mounted.
+X side layers 1, 2, and 3 merged
To be transported in Week 10.

Entire FPIX now at CERN.
Last half cylinder arrived in December
HC+Z1, HC-Z1 commissioned.
HC±Z2 by second week in March



Tracker Heat Exchanger Failure



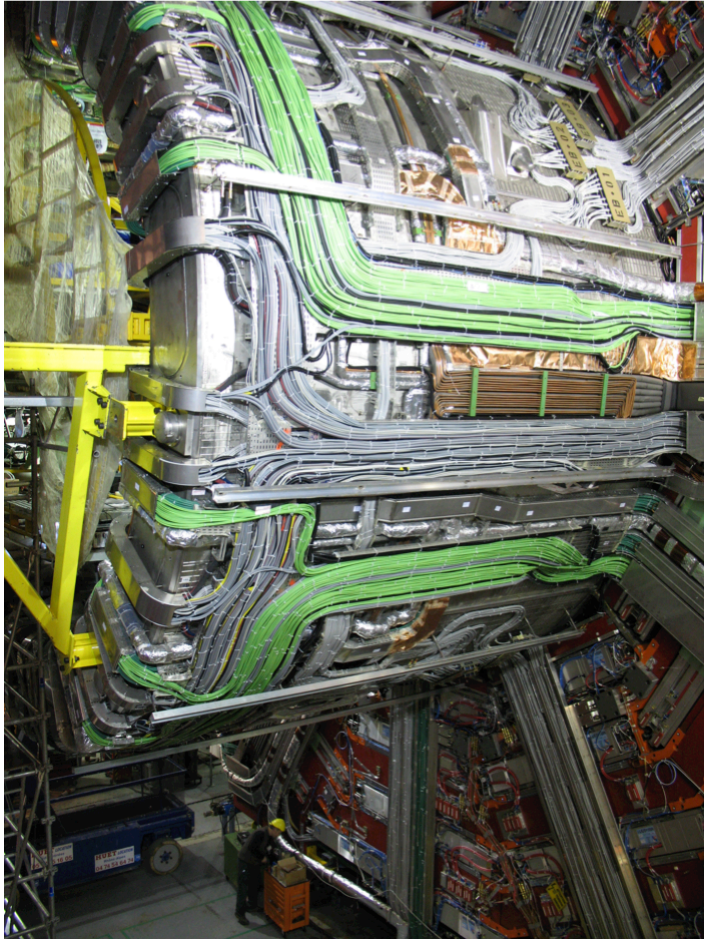
In November one of the two strip Tracker heat exchangers failed and some 300kg of 'brine' flooded into the C₆F₁₄ expansion tank and supply lines.

The Tracker was not connected at the time.

Clean-up largely done. Temporary fix to replace TYFOXIT with C₆F₁₄. Fully engineered replacement in 2 years?



Thermal Screen installed on +Z side





YE-1 lowered on January 22
Last of the 15 heavy pieces
YE-2 lowered on Jan. 12



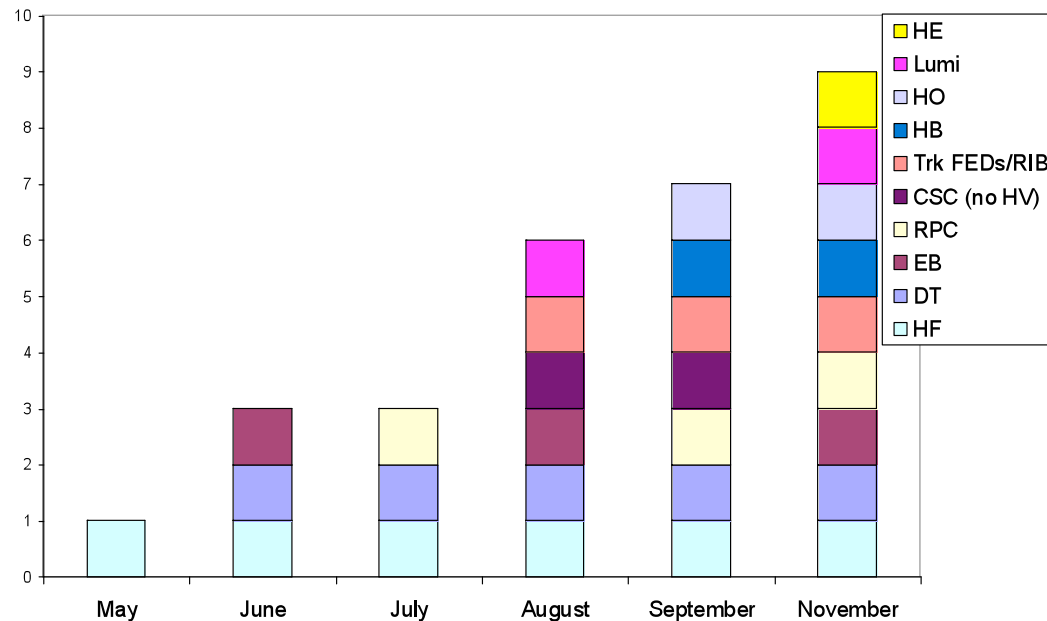
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Global/Cosmic Runs



FNAL ROC

Private global runs : Sheet1

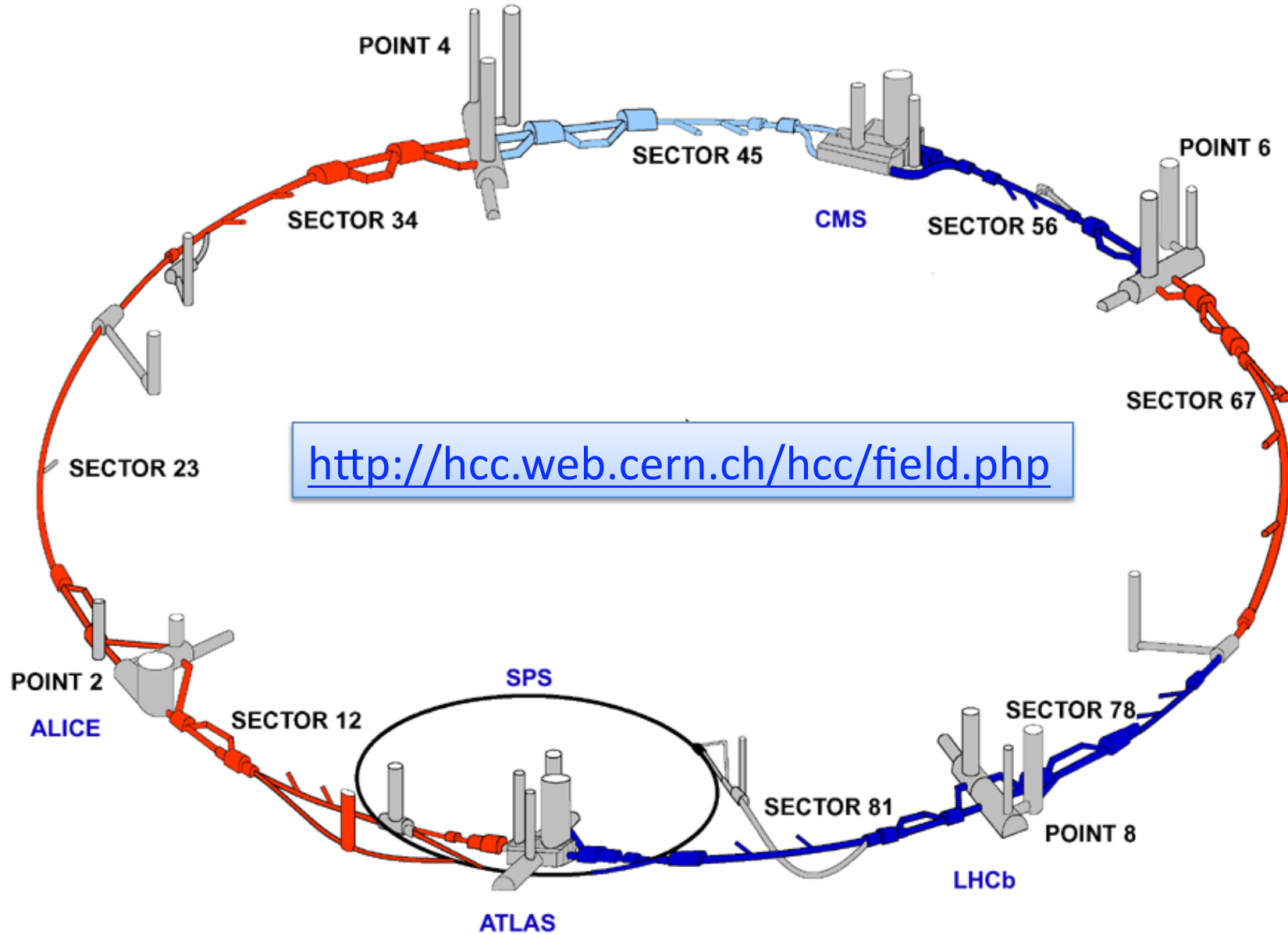
	31-Jan-2008	6-Feb-2008	7-Feb-2008	13-Feb-2008	14-Feb-2008	20-Feb-2008	21-Feb-2008	27-Feb-2008	28-Feb-2008	5-Mar-2008	6-Mar-2008	11-Mar-2008
Main Goal	HCAL self trigger	YE+1 & YB+2 DT+CSC	DT/RPC & ECAL	HCAL self trigger	ECAL Mip trigger	HCAL Self Trigger	ECAL + GT (WTE) ECAL mip trigger	PLL lock range scan	DT(YB0) & Tracker (& ECAL?)	Pixel Panel in the box & any other subdet triggering	Tracker & DT(YB0)	Global run
reserve Goal	ECAL MIP trigger	(+HE?) & GT FDL test	YE+ DT & GT FDL test	DT (YB0 YB2) +ECAL	HCAL self trigger + ECAL+GT (WTE)	DT/RPC (YB0, YB1, YB2) + ECAL	HCAL self trigger	HCAL self trigger	HCAL self trigger	Tracker & DT(YB0)	DT(YB0) & ECAL (SRP?)	

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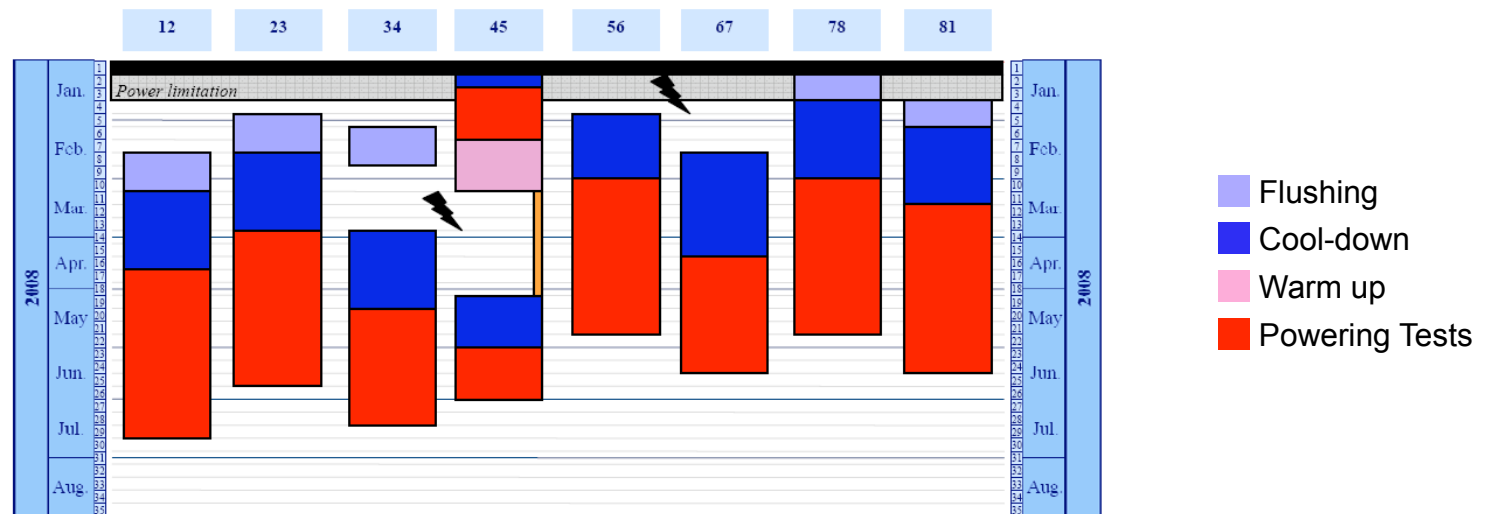
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Coming...
CCR0T
CRAFT



Sector Schedule as of January 18



S45: 3 training quenches, reached about 6 TeV

S56 held at LN₂ temperature over Christmas break

S78, S81 started cool down last week

A failure in any sector could mean a several month delay.

CMS/LHC Countdown to Collisions

March

- Cool down of CMS solenoid, low current test
- Beginning of CMS beam pipe installation in week 10
- Cosmic run (0T) starting in week 11

April

- Beam pipe bake-out continues

May

- Pixel systems installed in week 19
- CMS closed at end of month

June

- Cosmic Run 4T (CRAFT)
- CMS Ready for beam mid June
 - Second Endcap ECAL ready for installation
- Approximately 30 days of beam to establish first collisions

